Byte Academy

Python Fullstack

Introduction

Byte Academy **pioneered industry-focused programs** beginning with the launch of our FinTech course, the first of its type. Our educational programs bridge the gap between "business" and technology. Offerings include Python Fullstack Software Development, Data Science, FinTech, Quant-Algos, Product Management and Blockchain.

We work with companies to develop and adapt our curriculum to teach skill-sets that match real hiring needs. We also utilize the expertise of leading business executives, industry professionals, and those passionate about education and software development to craft each course. Many of these individuals teach at Byte.

Our courses are open to individuals spanning from beginner to more advanced programming backgrounds. Some may have already had industry expertise or work experience while others are brand new to the domain that they want to study. We provide **scholarships to women** and offer a **tuition deferral program** in which eligible students pay us back after they get a job.

Course formats include onsite **full-time, part-time and remote** in addition to customized corporate training.

For more information please see www.byteacademy.co

Technology Syllabus

Fullstack Python Development

Full and Part-Time

Common Topics throughout the course include: Git workflow, Unix/Linux usage, and Debugging

Phase 1-1: Python Basics

- Programming Fundamentals: Classes, Iteration, Control flow, Class Organization

- Utilize Git and Github

- Learning Bash commands and navigating your terminal

- Best Practices: Keeping it simple, DRY code, naming conventions, comments and documentation

- Python mini project: Well- documented Python module; (those are one to two-hour mini project which could be finished in class so that the students can discuss with peers and get feedback from the teacher/TA.)

- Python Standard Library (standard libraries typically include definitions for commonly used algorithms, data structures, and mechanisms for input and output.)

Technology Syllabus:

(pg 2)

We chose to emphasize Python in our curriculum because it is the highest paid coding language for recent bootcamp grads*

Phase 1-2: Computer Science, Beyond the Basics

- Introduction to Computer Science

- Big O Notation, Data Structures, Sorts and Searches

- MVC - Model Views Controller

- SQL Introduction

- (Weekend) - Building a terminal application utilizing the MVC Design pattern and a SQL Database for persistent data

Phase 1-3: Databases

- SQL Relationships

- SQL Joins

- Introduction to APIs

- CRUD and HTTP Verbs

- (Weekend) - Building a terminal application with the MVC Design pattern, persisting data in SQL, and utilizing APIs to grab data in JSON format

Technology Syllabus:

(pg 3)

Phase 2 - 1: Advanced Python

- Intro to Pandas
- Into to Matplotlib
- Review Phase 1
- Phase 1 Assessment
- (Weekend) - Introduction to HTML, CSS, JavaScript

Phase 2 - 2: Frontend

- Review intro to HTML, CSS, and JavaScript
- Higher Order Functions. Callbacks, Closure
- JavaScript Scope
- Document Object Model
- Event Listeners
- jQuery
- CSS Specificity
- CSS Pseudo Classes
- CSS Positioning
- CSS Media Queries
- CSS Grid Systems
- CSS Responsive Design
- Chrome Devtools
- (Weekend) - Building Tic Tac Toe, Blackjack, Connect Four

Phase 2 - 3: Backend

- AJAX Introduction
- Typing google.com in the browser
- Introduction to Flask
- Request Response Cycle
- What is the Request Object
- Setting up virtual environments
- HTML Forms
- Jinja Templating
- HTTP Verbs
- Sending a response in different formats. (JSON, HTML Templates)
- SQLAlchemy Introduction
- (Weekend) - Building a full stack web application that will make requests to HTTP API's, and persist information in a SQL database. Utilize HTML, CSS, JavaScript, AJAX, Flask, and SQL

Phase 2 - 4: Going deeper with the backend

- Password Hashing
- User Sessions
- REST
- Single Page Applications
- (Weeklong / Weekend Part 1) - 2-3 days building a RESTful API in Flask that will talk to a SQL Database, accept requests, and return JSON Responses
- (Weeklong / Weekend Part 2) - 2-3 days building a Single Page Application that will consume the RESTful API just built using HTML, CSS, JS, AJAX, and Flask

Technology Syllabus:

(pg 5)

Phase 2 - 5: Advanced web technologies

- Introduction to Django
- Django Directory Structure
- Django Models
- Django Forms / Templating
- Building more full stack applications
- Review for Phase 2 Assessment

Phase 3 -1: Final Project Phase, Deep Dive Lectures, and Mock Interviews

- Students will do two to three projects
- Each project done in 2 week sprints
- There will be 1 group project, 1 solo project, and the third project is optional between solo or group
- Lectures during this phase will adapt towards student interests and their projects
- Lectures include
  - SASS/SCSS
  - Flexbox
  - D3.js / C3.js
  - ES6
  - React
  - PostgreSQL
  - MySQL

- Deploy Final Projects.

More information?

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